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Scope of Review

Scope of Review and Required Documentation for Review (in support of CD-2)

Below is a discussion of the 13 elements that will, in general, form the scope of review of the Performance Baseline review, as well as the required documentation for this review. It is important to recognize that both the scope and required documentation may vary for specific projects depending on the type of project and tailoring (see Section 7.0 for a further discussion of tailoring).

Scope of Review

For each of the 13 review elements, we have identified the specific lines of inquiry that the EIR Team will address.

1. Resource Loaded Schedule. For selected Work Breakdown Structure (WBS) elements (typically, those constituting significant cost and/ or risk), the EIR team will summarize the detailed basis for the cost estimate and schedule duration. The EIR Team will assess the method of estimation and the strengths/weaknesses of the cost and schedule estimates for each WBS element reviewed. The EIR Team will identify and assess key cost and schedule assumptions and evaluate the reasonableness of these assumptions as related to the quality of the cost and schedule estimates for each WBS.

Note: DOE uses the term resource loaded schedule to refer to the linkage of scope, schedule, and budgeted cost of specific WBS elements. Near term estimates are generally supported by "work packages", while future estimates are supported by "planning packages." The ANSI Standard for Earned Value Management System uses the term "resource plan" or "time phased budget" in lieu of resource loaded schedule.

2. TPC and Project Schedule. Provide an independent evaluation of the TPC and overall Project Schedule. This evaluation will, to a large extent, depend on the assessment of the specific WBS elements reviewed under the resource loaded schedule above. In addition, the EIR team should assess cost and schedule contingency and other cost and schedule factors related to TPC and the project completion schedule. The EIR team should review the Critical Path schedule and assess whether the Critical Path is reasonably defined and whether the schedule is integrated and reflects reasonable schedule durations. The EIR team should ensure that the TPC and project completion date incorporates all activities necessary to successfully complete the project. For production type projects, this would include appropriate start-up testing and readiness reviews and appropriate contingencies. For "science type" projects the TPC and schedule should include all activities necessary to ensure that the project is ready for the start of experimental activities. Finally, the EIR team will assess whether the project funding profile is consistent with the resource loaded schedule. In general, the EIR assessment of the overall cost (i.e. TPC) represents an Independent Cost Review (ICR), and not an Independent Cost Estimate or "bottoms-up" estimate. As such, the ICR generally represents a comparison to typical cost and schedule ranges and comparisons to similar type projects.

3. Work Breakdown Structure. Assess whether the WBS incorporates all project work, and whether it represents a reasonable breakdown of the project work scope. Assess whether the resource loaded schedule is consistent with WBS for the project work scope.

4. Risk Management. Describe the approach used to identify project risks and assess adequacy of this approach. Assess whether risks have been quantified based on the probability and consequence of occurrence, and have been properly classified as high, medium, and low. Assess whether all appropriate risk mitigation actions have been incorporated into the Performance Baseline to include cost and schedule contingency.

5. Preliminary Design and Design Review. Evaluate adequacy of preliminary design including adequacy of drawings and specifications, and assess whether they are consistent with system functions and requirements. Assess whether all safety structures, systems, and components (SSC) are incorporated into the preliminary design. Review results of the preliminary design review and assess whether additional work identified in the design review has been incorporated into the Performance Baseline as appropriate.

6. System Functions and Requirements. Assess whether "design to" functions and requirements are complete and have a sound technical basis. The EIR assessment of requirements should include safety and external requirements such as permits, licenses, and regulatory approvals. For Design-Build projects, the EIR team should assess whether project requirements are well-defined and unlikely to result in significant scope changes. The EIR team should also assess whether system requirements are derived from and consistent with Mission Need. Finally, assess whether the CD-4 (i.e. project completion) activities are clearly identified in the Requirements document, and whether these activities are quantified and measurable, or can otherwise be reasonably determined as complete.

7. Hazards Analysis. Evaluate the quality of the Hazard Analysis and assess whether all scope, schedule, and costs necessary for safety are incorporated into the baseline. Review the classification of SSCs as safety class or safety significant. Assess the Hazards Analysis process, including the use of internal and external safety reviews. Review any Defense Nuclear Facilities Safety Board and/or Nuclear Regulatory Commission interface and discuss the status of their involvement.

8. Value Management/Engineering. Assess the applicability of Value Management/Engineering, and whether a Value Management/Engineering analysis has been performed with results being incorporated into the baseline. Also provide an assessment of the Value Management/Engineering process for this project.

9. Project Controls/Earned Value Management System. Assess whether all project control systems and reporting requirements will be in place prior to CD-2. For projects where Earned Value Management System is not required, assess the adequacy of an alternate project control system for monitoring, controlling and reporting project cost and schedule performance.

10. Project Execution Plan. Review the Project Execution Plan and determine if it reflects and supports the way the project is being managed, is consistent with the other project documents, and establishes a plan for successful execution of the project.

11. Start-up Test Plan. For all production type projects (i.e., projects with follow-on operational activities), assess whether the start-up test plan identifies the acceptance and operational system tests required to demonstrate that system meets design operational specifications, and safety requirements. The EIR team should review key tests to ensure that sufficient description is provided to estimate cost and schedule durations associated with these tests. The EIR team should ensure that the start-up test plan identifies how tests will be determined to be successful, and that associated equipment and instrumentation has been included in the preliminary design. Finally, the EIR team should assess whether there is sufficient cost and schedule contingencyfor test and equipment failure during start-up testing.

12. Acquisition Strategy. Review the Acquisition Strategy to determine if it is consistent with the way the project is being executed. The Review Team should evaluate any changes from CD-1 that may impact whether the current strategy represents best value to the government.

13. Integrated Project Team. Assess whether the project management staffing level is appropriate, and determine if appropriate disciplines are included in the Integrated Project Team. Identify any deficiencies in the Integrated Project Team that could hinder successful execution of the project.

Required Documentation

In general, the following documents are required for the Performance Baseline Review. Other associated material may be requested by the Review Team to ensure a complete and accurate review is performed.

- Detailed Resource Loaded Schedule
- Detailed Cost Estimate
- System Functions and Requirements Document (also referred to as the "Designto" requirements or Design Criteria)
- Results of and Responses to Site Preliminary Design Review
- Preliminary Design Drawings
- Project Execution Plan
- Start-up Test Plan (as appropriate)
- Hazards Analysis
- Risk Management Plan/Assessment
- Acquisition Strategy
- Value Management/Engineering Report

Scope of Review for Construction or Execution Readiness

The purpose of the Construction or Execution Readiness Review is to assess the readiness for construction or execution and to confirm the completeness and accuracy of the Performance Baseline. The Scope of review has everal elements relative to construction readiness, but retains many of the elements contained in the Performance Baseline Review. The Required Documentation is also presented below.

Scope of Review

1. Final Drawings and Specifications. Assess completeness and quality of drawings and design specifications. This is typically accomplished by reviewing selected construction elements or systems, including the key project elements posing the more difficult construction challenges. Assess whether bid packages are sufficiently clear and well defined as to be ready for bid.

2. Construction/Execution Planning. Assess adequacy of construction/project execution planning and staffing. Assess logistics including interface with operating facilities, infrastructure interfaces, adequacy of lay-down areas, temporary construction facilities, security and badging readiness, and otherlogistical elements. Federal and contractor staffing should also be reviewed to ensure adequate oversight of the work, including safety, performance, and quality.

3. Resource Loaded Schedule. Review the Resource Loaded Schedule to ensure that it is consistent with the approved Performance Baseline at CD-2 with no changes to the TPC, completion schedule, and key performance metrics. Also assess the reasonableness of the schedule relative to the critical path.

4. Final Design Functions and Requirements/Site Final Design Review. Assess whether all final design functions and requirements are reflected in the Performance Baseline, including safety SSCs and external requirements such as permits, licenses, and regulatory approvals. Also, assess whether all required changes from the Site Final Design Review are incorporated into the Performance Baseline, and assess whether the Performance Baseline remains consistent with that approved at CD-2.

5. Risk Management. Assess whether the risk assessment has been updated, as appropriate, to address any new risks identified in final design. Assess whether cost and schedule contingency remains sufficient for project risks.

6. Value Management/Engineering. Assess the application of Value Management/Engineering during Final Design, and if results have been incorporated into the Performance Baseline.

7. Acquisition Strategy. Review the Acquisition strategy to determine if there have been any significant changes and if the acquisition approach continues to represent the best value to the government.

8. Project Execution Plan. Review the Project Execution Plan and determine if it reflects and supports the way the project and construction effort is being managed. It should be updated to reflect any changes as a result of Final Design and be consistent with the other project documents.

9. Project Controls/Earned Value Management System. Assess whether all project control systems and reporting requirements are in place and are being properly used to correctly report Earned Value.

10. Integrated Project Team. Assess whether the staffing level is appropriate and determine if appropriate disciplines are included in the Integrated Project Team. Identify any deficiencies in the Integrated Project Team that could hinder successful construction or execution.

Required Documentation

In general, the following documents are required for the Construction or Execution Readiness Review. Other associated material may be requested by the Review Team to ensure a complete and accurate review is performed.

- Final Design Drawings and Specifications
- Results of and Responses to Site Final Design Review
- Construction Planning Document
- Project Execution Plan
- Detailed Resource Loaded Schedule
- Detailed Cost Estimate
- System Functions and Requirements Document
- Risk Management Plan/Assessment
- Safety Documentation
- Acquisition Strategy
- Value Management/Engineering Report